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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,473	08/26/2003	Jon D. Klingensmith	895,675-173	5384

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EXAMINER

CHAWAN, SHEELA C

ART UNIT	PAPER NUMBER
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2624

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p align="center">10/649,473</p>	<p>Applicant(s)</p> <p align="center">KLINGENSMITH ET AL.</p>	
	<p>Examiner</p> <p align="center">Sheela C. Chawan</p>	<p>Art Unit</p> <p align="center">2624</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/6/06,9/12/05,9/24/04,8/26/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 2/6/06, 9/12/05, 9/24/04, 8/26/03, the information disclosure statement is being considered by the examiner.

Drawings

2. The Examiner has approved drawings filed on 8/26/03.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1- 35 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-27 of U.S. Patent No. 6,381,350 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because. The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming the common subject matters as follow. The only

difference is interpolating between the control points to generate a boundary contour from the Cartesian image would be at least an obvious if not inherent. Furthermore, claims in the instant application are broader than the claims in the Patent; otherwise we might not have a double patenting rejection.

As to claim 1, discloses a method of identifying a border of a vascular object, comprising (U.S. Patent No. (6,381,350 B1), Preamble teaches (see claim 1, column 9, lines 46- 50:

acquiring multiple sets of blood-vessel data, each set corresponding to an image of a vascular object (U.S. Patent No. (6,381,350 B1), Preamble teaches (see claim 1, column 9, lines 51- 56);

using a set of blood-vessel data to approximate a border on an image of said vascular object (U.S. Patent No. (6,381,350 B1), (see claim 1, column 9, lines 55- 56);

identifying at least one control point on said border (U.S. Patent No. (6,381,350 B1), (see claim 1, column 9, lines 55- 56);

extrapolating (note, extrapolating corresponds for optimizing boundary contour points for blood vessel in ultrasound image, column 9, lines 59- 63) said at least one control point to at least one other set of blood-vessel data, creating at least one other control point on at least one other image (U.S. Patent No. (6,381,350 B1), (see claim 1, column 9, lines 59- 63);

using said at least one other control point to approximate at least one other border on said at least one other image (U.S. Patent No. (6,381,350 B1), (see claim 1, column 9, lines 59- 63); and

adjusting said at least one other border in accordance with at least a gradient factor (U.S. Patent No. (6,381,350 B1), (see claim 1, column 9, lines 61-63).

As to claim 2, discloses the method of Claim 1, wherein said step of acquiring multiple sets of blood-vessel data further comprises acquiring multiple sets of intra-vascular ultrasound (IVUS) data, where each set corresponds to an IVUS image of said vascular object (U.S. Patent No. (6,381,350 B1), (see claim 2, column 9, lines 64-67);

As to claim 3, discloses the method of Claim 1, wherein said step of using a set of blood-vessel data to approximate a border further comprises identifying gradients in said image and using said gradients to approximate said border on said image of said vascular object (U.S. Patent No. (6,381,350 B1), (see claim 3, column 10, lines 1-5).

4. The method of Claim 1, wherein said step of extrapolating said at least one control point further comprises extrapolating said at least one control point to an adjacent set of blood-vessel data, said adjacent set corresponding to another image adjacent to said image (U.S. Patent No. (6,381,350 B1), (see claim 4, column 10, lines 29- 37).

As to claim 5, discloses the method of Claim 1, wherein said step adjusting said at least one other border further comprises adjusting said at least one other border in accordance with at least a continuity factor, said continuity factor representing an amount of continuity between adjacent control points on said at least one other border (U.S. Patent No. (6,381,350 B1), (see claim 4, column 10, lines 15 - 54).

As to claim 6, discloses the method of Claim 1, wherein said step of adjusting said at least one other border further comprises adjusting said at least one other border in accordance with at least a curvature factor, said curvature factor representing an amount of continuity between adjacent portions of said at least one other border (U.S. Patent No. (6,381,350 B1), (see claim 6 and 6, column 10, lines 20- 28).

As to claim 7, discloses the method of Claim 5, wherein said step of adjusting said at least one other border further comprises adjusting said at least one other border in accordance with at least a curvature factor, said curvature factor representing an amount of continuity between adjacent portions of said at least one other border (U.S. Patent No. (6,381,350 B1), (see claim 3, column 10, lines 6- 11).

As to claim 8, discloses the method of Claim 4, further comprising automatically adjusting an adjacent border if said border is manually adjusted, said adjacent border being located on said another image (U.S. Patent No. (6,381,350 B1), (see claim 7, column 10, lines 39- 47).

As to claim 9, see (U.S. Patent No. (6,381,350 B1), (see claim 24, column 12, lines 45- 67, column 13, lines 1-3).

As to claim 10, discloses the border-identification system of Claim 9, wherein said data-gathering device comprises an intra-vascular ultrasound (IVUS) console (U.S. Patent No. (6,381,350 B1), (see claim 6, column 10, lines 25- 28).

As to claim 11, discloses the border-identification system of Claim 9, wherein said border-detection application is further adapted to identify gradients in said at least

one image and use said gradients to produce starting-border data (U.S. Patent No. (6,381,350 B1), (see claim 7, column 10, lines 41- 47).

As to claim 12, The border-identification system of Claim 11, wherein said border-detection application is further adapted to use said starting-border data to produce said starting-control-point data (U.S. Patent No. (6,381,350 B1), (see claim 7, column 10, lines 41-47).

As to claim 13, the border-identification system of Claim 9, wherein said extrapolation application is further adapted to produce said additional-border data by using cubic interpolation to connect adjacent ones of said at least one other control point (U.S. Patent No. (6,381,350 B1), (see claim 6, column 10, lines 35- 38).

As to claim 14, the border-identification system of Claim 9, wherein said active-contour application is further adapted to use gradient data to adjust said at least one other border, said gradient data representing gradients in said at least one other image (U.S. Patent No. (6,381,350 B1), (see claim 3, column 10, lines 6- 11).

As to claim 15, the border-identification system of Claim 14, wherein said active-contour application is further adapted to consider the continuity of adjacent ones of said at least one other control point in adjusting said at least one other border (U.S. Patent No. (6,381,350 B1), (see claim 4, column 10, lines 15- 19).

As to claim 16, the border-identification system of Claim 15, wherein said active-contour application is further adapted to consider the curvature of said at least one other border in adjusting said at least one other border (U.S. Patent No. (6,381,350 B1), (see claim 4, column 10, lines 15-19).

As to claim 17, the border-identification system of Claim 9, wherein said active-contour application is further adapted to adjust said at least one other border in accordance with at least one factor, said at least one factor being selected from the group consisting of a gradient factor, a continuity factor and a curvature factor (U.S. Patent No. (6,381,350 B1), (see claim 4, column 10, lines 15-19).

As to claim 18, see the rejection of claim 1 above.

As to claim 19, see the rejection of claim 2 above.

As to claim 20, see the rejection of claim 3 above.

4. As to claims 1-8 and 18-20, the steps claimed as method for characteristics method learning is nothing more than restating the function of the specific components of the apparatus as claimed above and therefore, it would have been obvious, considering the aforementioned rejection for the apparatus claims 9- 17.

Contact Information

5 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela C Chawan whose telephone number is. 571-272-7446. The examiner can normally be reached on Monday - Thursday 7.30 - 6.00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on 571-272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sheela Chawan
Patent Examiner
Group Art Unit 2624
June 8, 2007


SHEELA CHAWAN
PRIMARY EXAMINER